FIG. 1

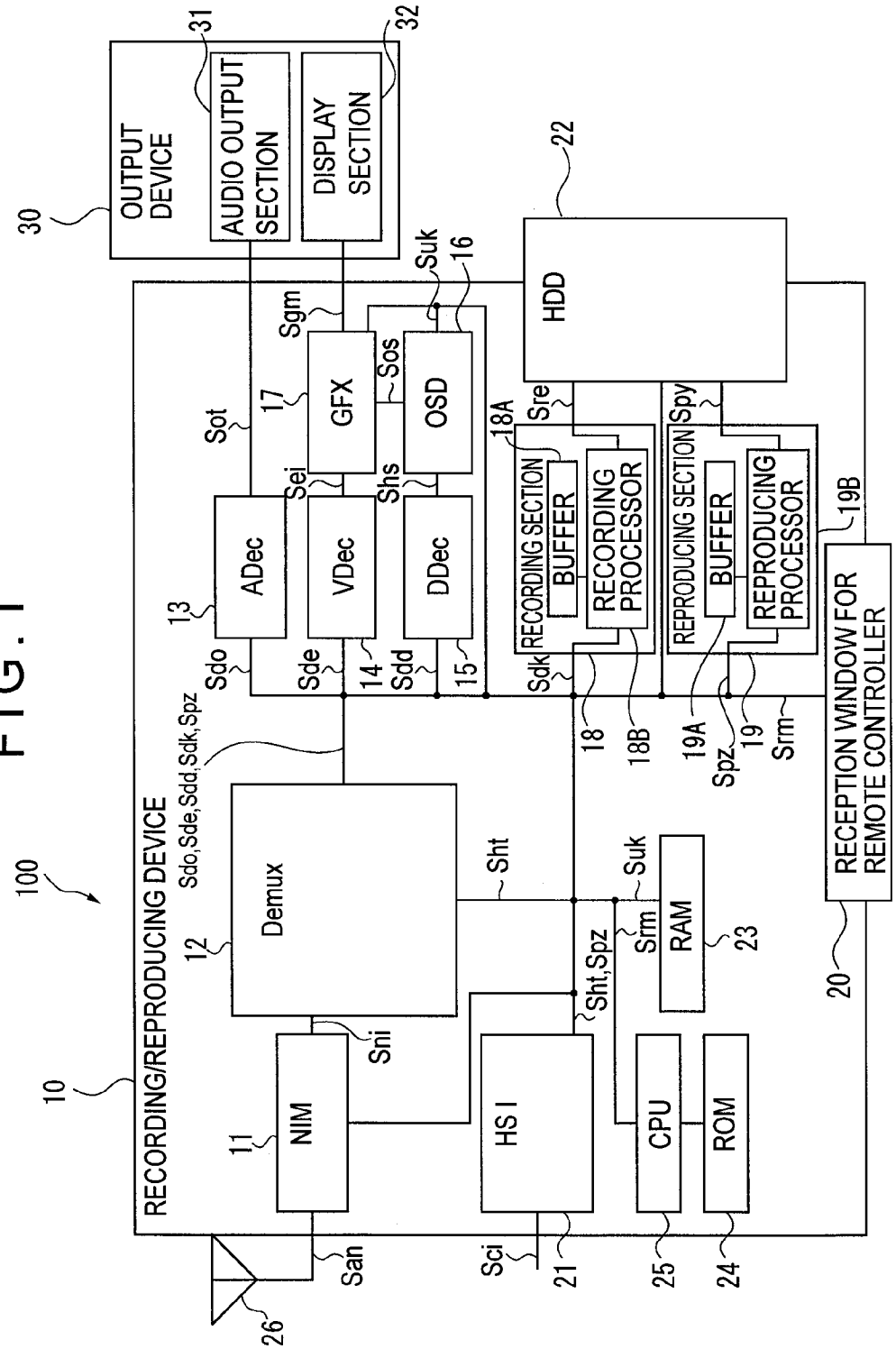

100
10
RECORDING/REPRODUCING DEVICE
30
OUTPUT DEVICE
31
AUDIO OUTPUT SECTION
32
DISPLAY SECTION
22
HDD
Suk
16
Sgm
17
GFX
Sos
OSD
Sot
Sei
Shs
ADec
VDec
DDec
13
14
15
Sdo
Sde
Sdd
18A
Sre
Spy
RECORDING SECTION
BUFFER
RECORDING PROCESSOR
REPRODUCING SECTION
BUFFER
REPRODUCING PROCESSOR
19B
Sdk
18
18B
19A
19
Spz
Srm
Sdo,Sde,Sdd,Sdk,Spz
Demux
12
Sht
Suk
Srm
RAM
23
Sht,Spz
Sni
NIM
11
HS I
CPU
ROM
RECEPTION WINDOW FOR REMOTE CONTROLLER
20
San
Sci
21
25
24
26

FIG. 2

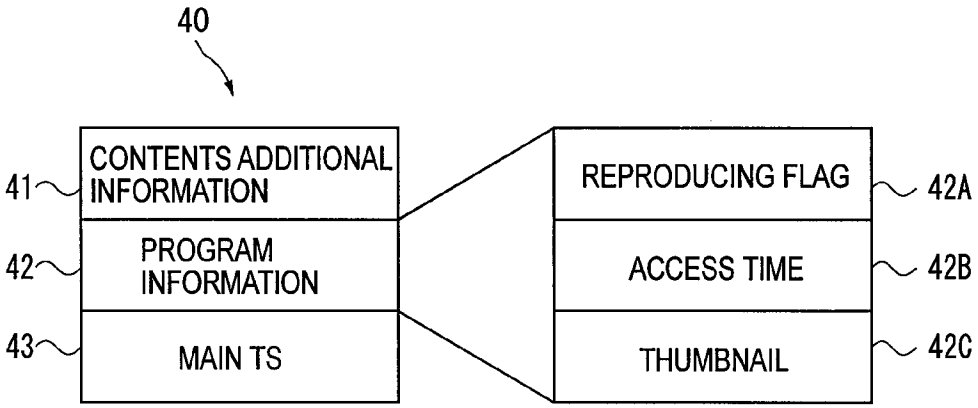

40
CONTENTS ADDITIONAL INFORMATION
41
PROGRAM INFORMATION
42
MAIN TS
43
REPRODUCING FLAG
42A
ACCESS TIME
42B
THUMBNAIL
42C

FIG. 3

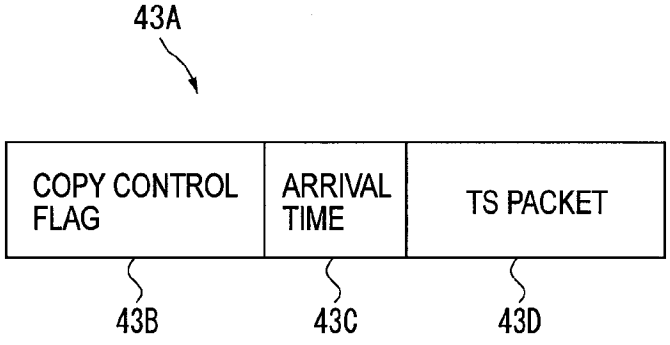

43A
COPY CONTROL FLAG
ARRIVAL TIME
TS PACKET
43B
43C
43D

FIG. 4

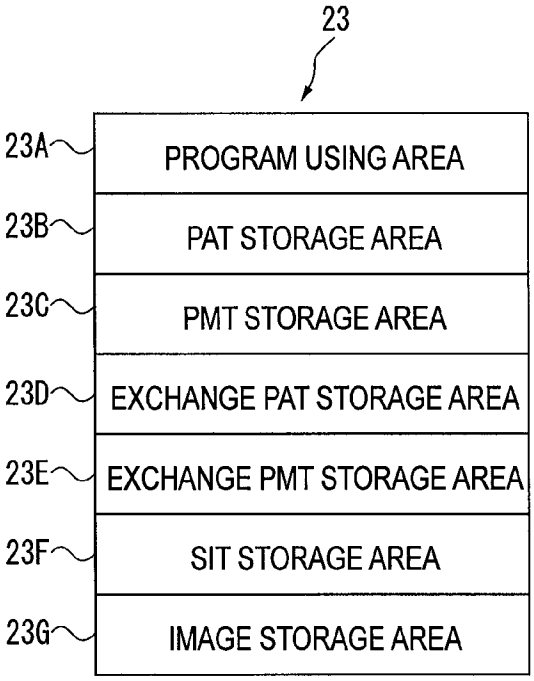

23
23A
PROGRAM USING AREA
23B
PAT STORAGE AREA
23C
PMT STORAGE AREA
23D
EXCHANGE PAT STORAGE AREA
23E
EXCHANGE PMT STORAGE AREA
23F
SIT STORAGE AREA
23G
IMAGE STORAGE AREA

FIG. 5

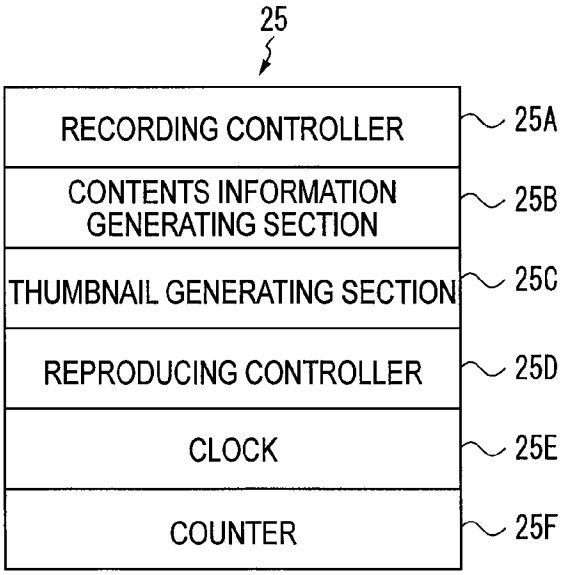

25
RECORDING CONTROLLER
25A
CONTENTS INFORMATION GENERATING SECTION
25B
THUMBNAIL GENERATING SECTION
25C
REPRODUCING CONTROLLER
25D
CLOCK
25E
COUNTER
25F

FIG. 6

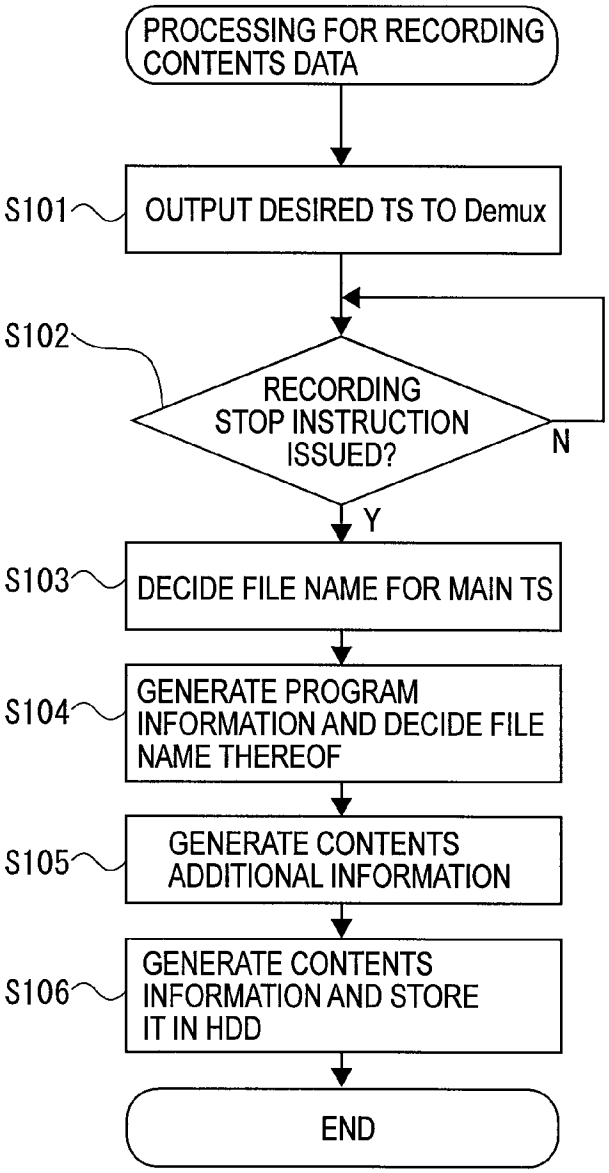

PROCESSING FOR RECORDING CONTENTS DATA
S101
OUTPUT DESIRED TS TO Demux
S102
RECORDING STOP INSTRUCTION ISSUED?
N
Y
S103
DECIDE FILE NAME FOR MAIN TS
S104
GENERATE PROGRAM INFORMATION AND DECIDE FILE NAME THEREOF
S105
GENERATE CONTENTS ADDITIONAL INFORMATION
S106
GENERATE CONTENTS INFORMATION AND STORE IT IN HDD
END

FIG. 7

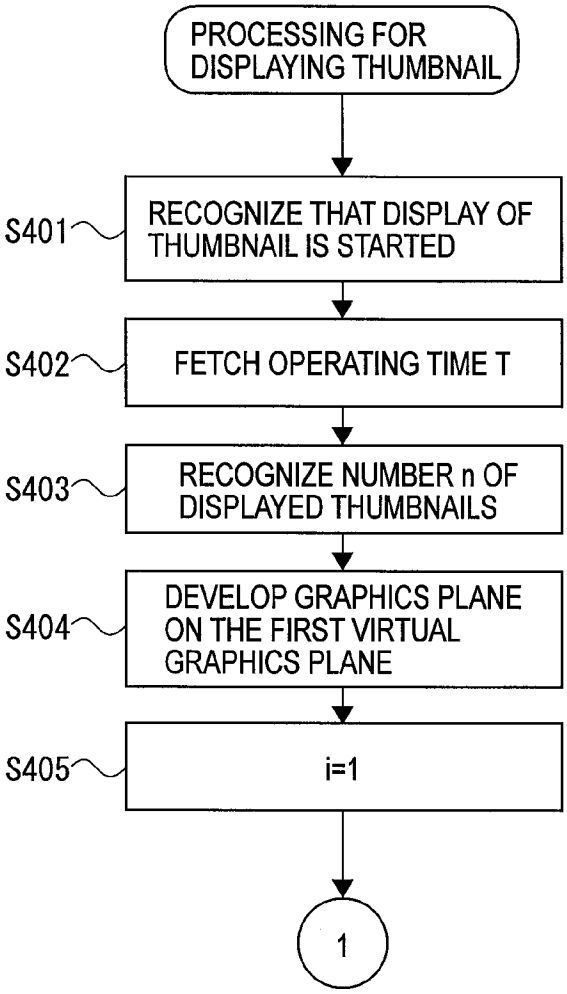

PROCESSING FOR DISPLAYING THUMBNAIL
S401
RECOGNIZE THAT DISPLAY OF THUMBNAIL IS STARTED
S402
FETCH OPERATING TIME T
S403
RECOGNIZE NUMBER n OF DISPLAYED THUMBNAILS
S404
DEVELOP GRAPHICS PLANE ON THE FIRST VIRTUAL GRAPHICS PLANE
S405
i=1
1

FIG. 8

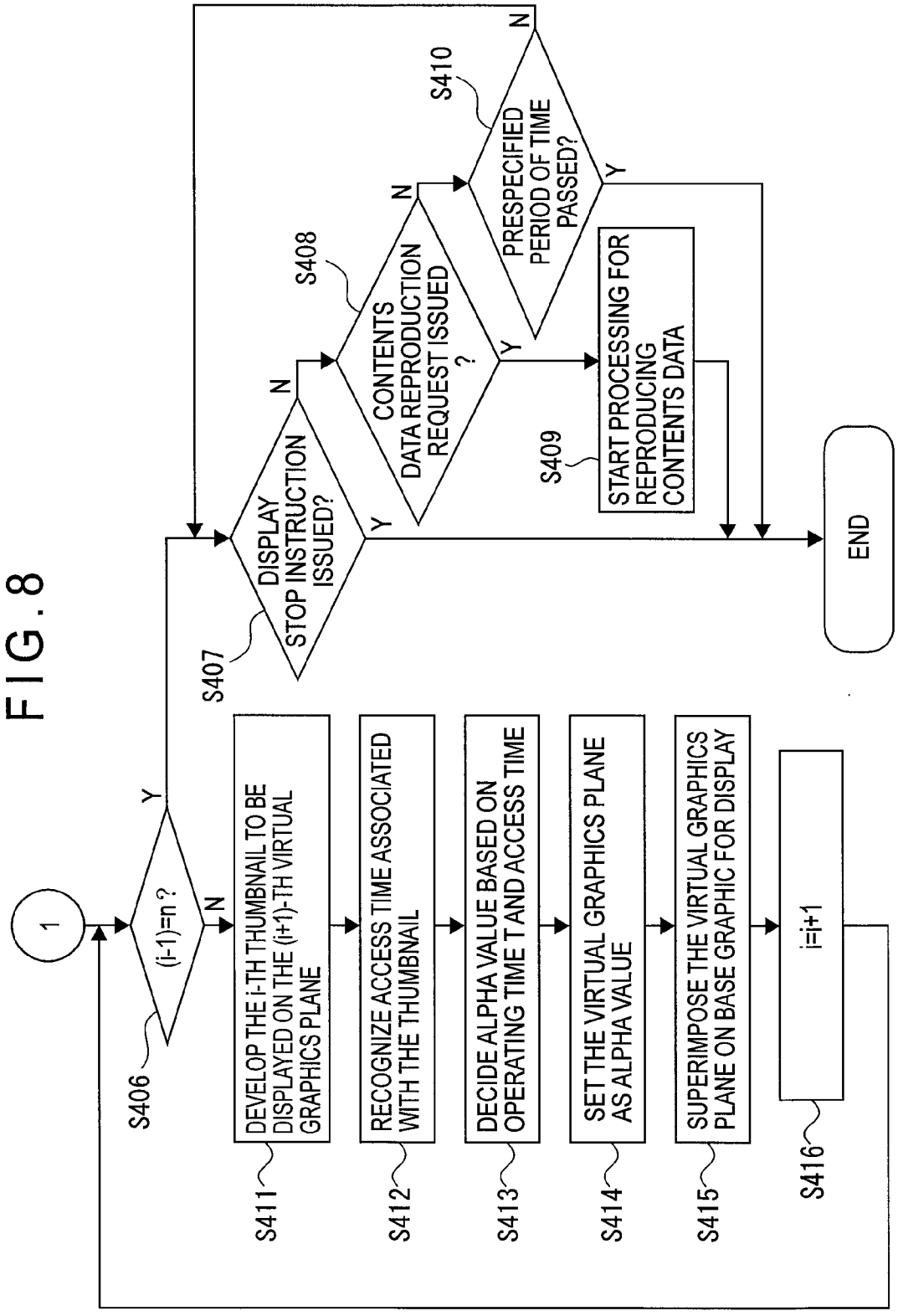

1
S406
(i-1)=n ?
Y
N
S407
DISPLAY STOP INSTRUCTION ISSUED?
Y
N
S408
CONTENTS DATA REPRODUCTION REQUEST ISSUED ?
Y
N
S410
PRESPECIFIED PERIOD OF TIME PASSED?
Y
N
S409
START PROCESSING FOR REPRODUCING CONTENTS DATA
END
S411
DEVELOP THE i-TH THUMBNAIL TO BE DISPLAYED ON THE (i+1)-TH VIRTUAL GRAPHICS PLANE
S412
RECOGNIZE ACCESS TIME ASSOCIATED WITH THE THUMBNAIL
S413
DECIDE ALPHA VALUE BASED ON OPERATING TIME T AND ACCESS TIME
S414
SET THE VIRTUAL GRAPHICS PLANE AS ALPHA VALUE
S415
SUPERIMPOSE THE VIRTUAL GRAPHICS PLANE ON BASE GRAPHIC FOR DISPLAY
S416
i=i+1

FIG. 9

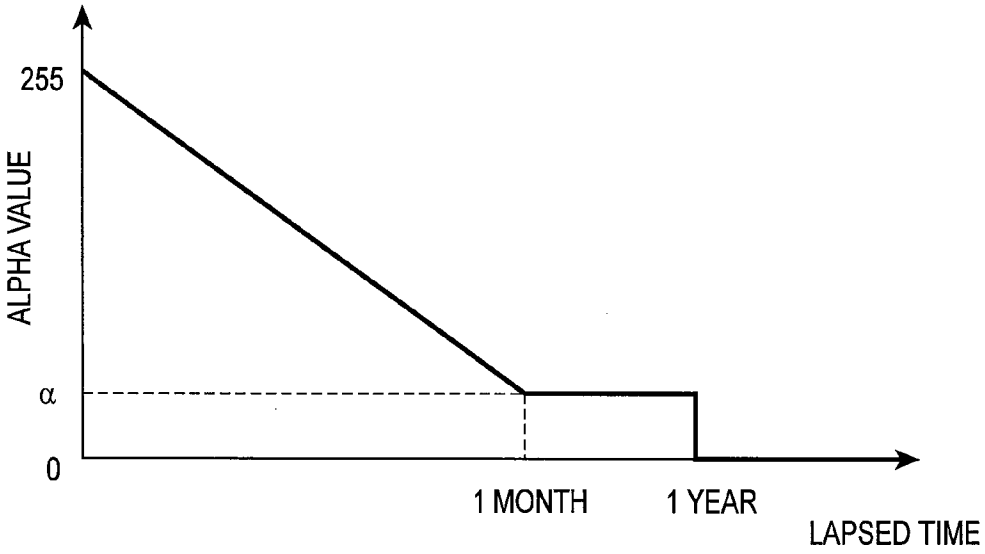


FIG. 10A

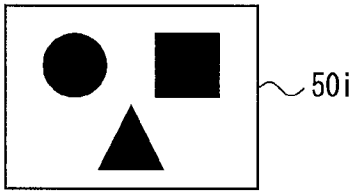


FIG. 10B

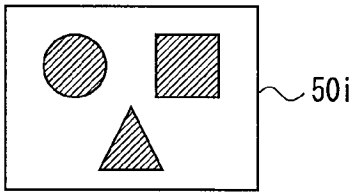


FIG. 10C

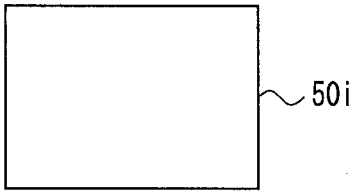


FIG. 11

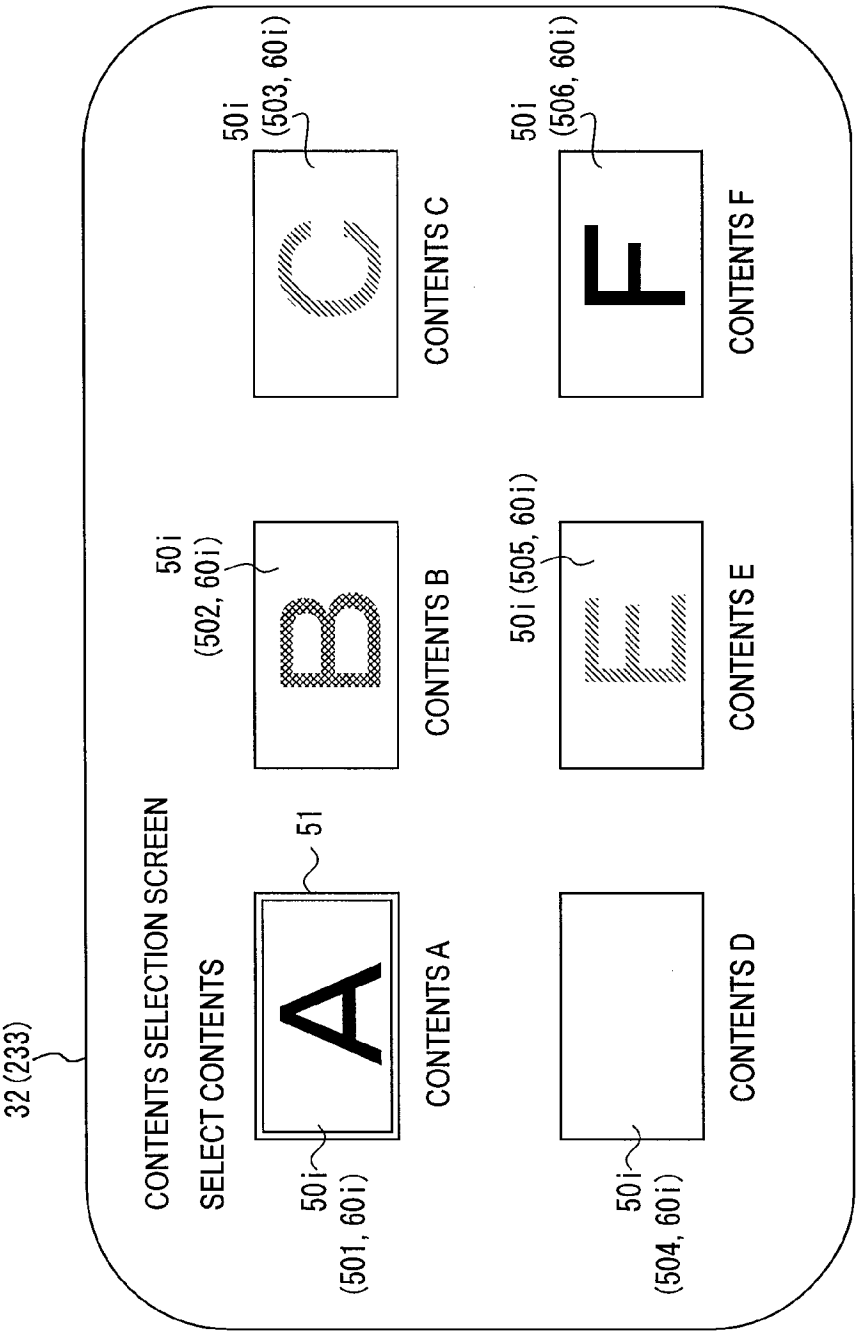

32 (233)
CONTENTS SELECTION SCREEN
SELECT CONTENTS
51
50i (501, 60i)
CONTENTS A
50i (502, 60i)
CONTENTS B
50i (503, 60i)
CONTENTS C
50i (504, 60i)
CONTENTS D
50i (505, 60i)
CONTENTS E
50i (506, 60i)
CONTENTS F

FIG. 12

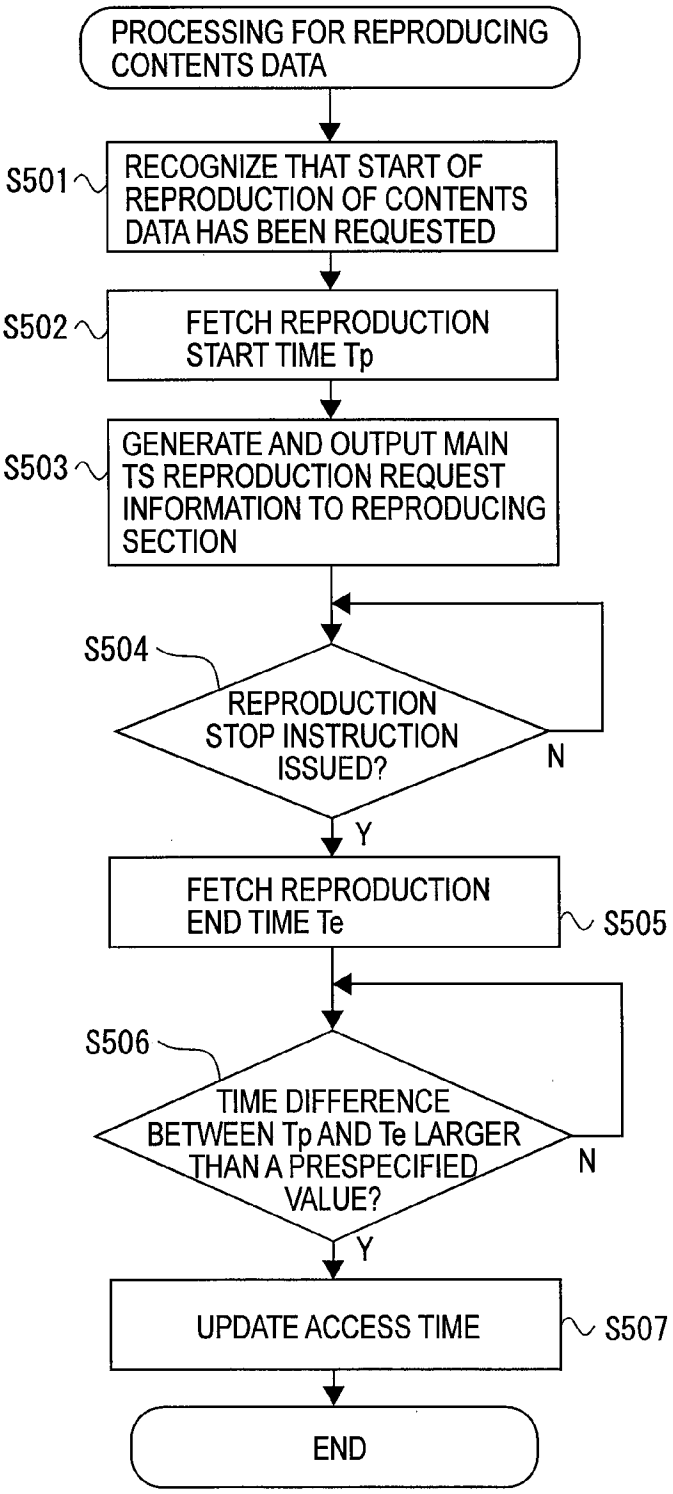

PROCESSING FOR REPRODUCING CONTENTS DATA
S501
RECOGNIZE THAT START OF REPRODUCTION OF CONTENTS DATA HAS BEEN REQUESTED
S502
FETCH REPRODUCTION START TIME Tp
S503
GENERATE AND OUTPUT MAIN TS REPRODUCTION REQUEST INFORMATION TO REPRODUCING SECTION
S504
REPRODUCTION STOP INSTRUCTION ISSUED?
N
Y
FETCH REPRODUCTION END TIME Te
S505
S506
TIME DIFFERENCE BETWEEN Tp AND Te LARGER THAN A PRESPECIFIED VALUE?
N
Y
UPDATE ACCESS TIME
S507
END

FIG. 13

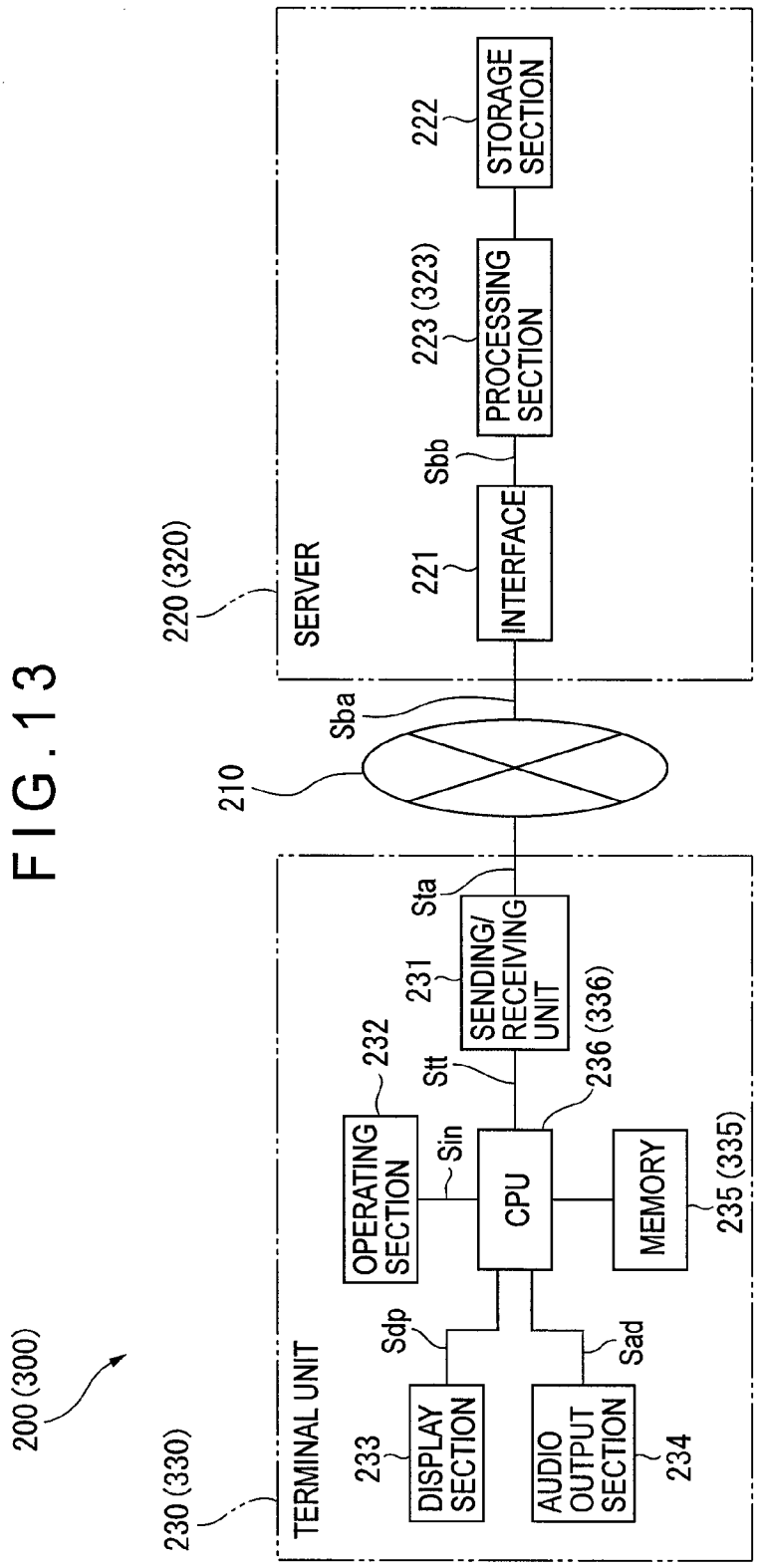

200 (300)
230 (330)
TERMINAL UNIT
233
DISPLAY SECTION
Sdp
OPERATING SECTION
232
Sin
CPU
MEMORY
235 (335)
Sad
AUDIO OUTPUT SECTION
234
Stt
236 (336)
231
SENDING/ RECEIVING UNIT
Sta
210
Sba
220 (320)
SERVER
221
INTERFACE
Sbb
223 (323)
PROCESSING SECTION
222
STORAGE SECTION

FIG. 14

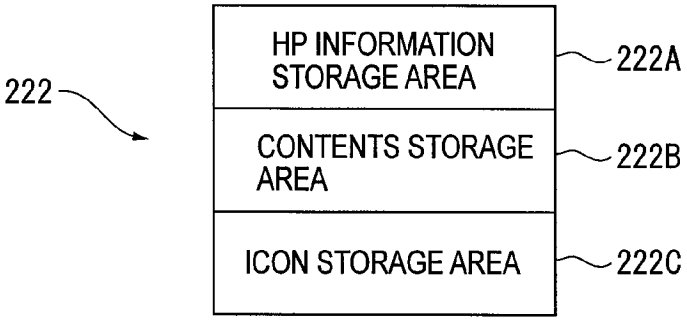


FIG. 15

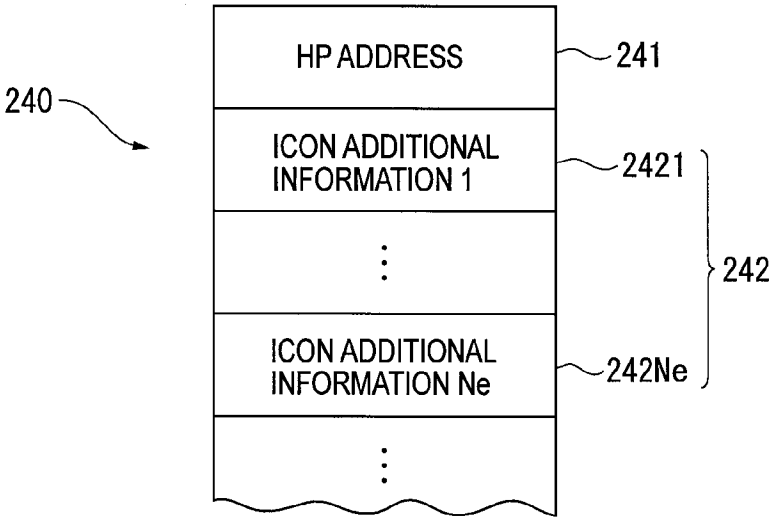


FIG. 16

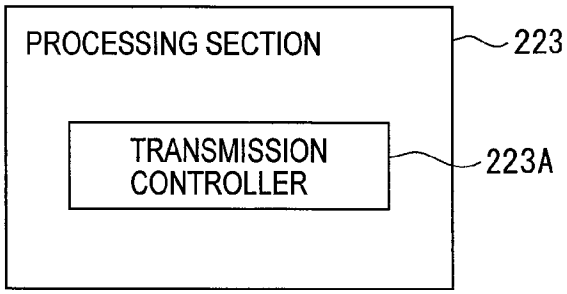


FIG. 17

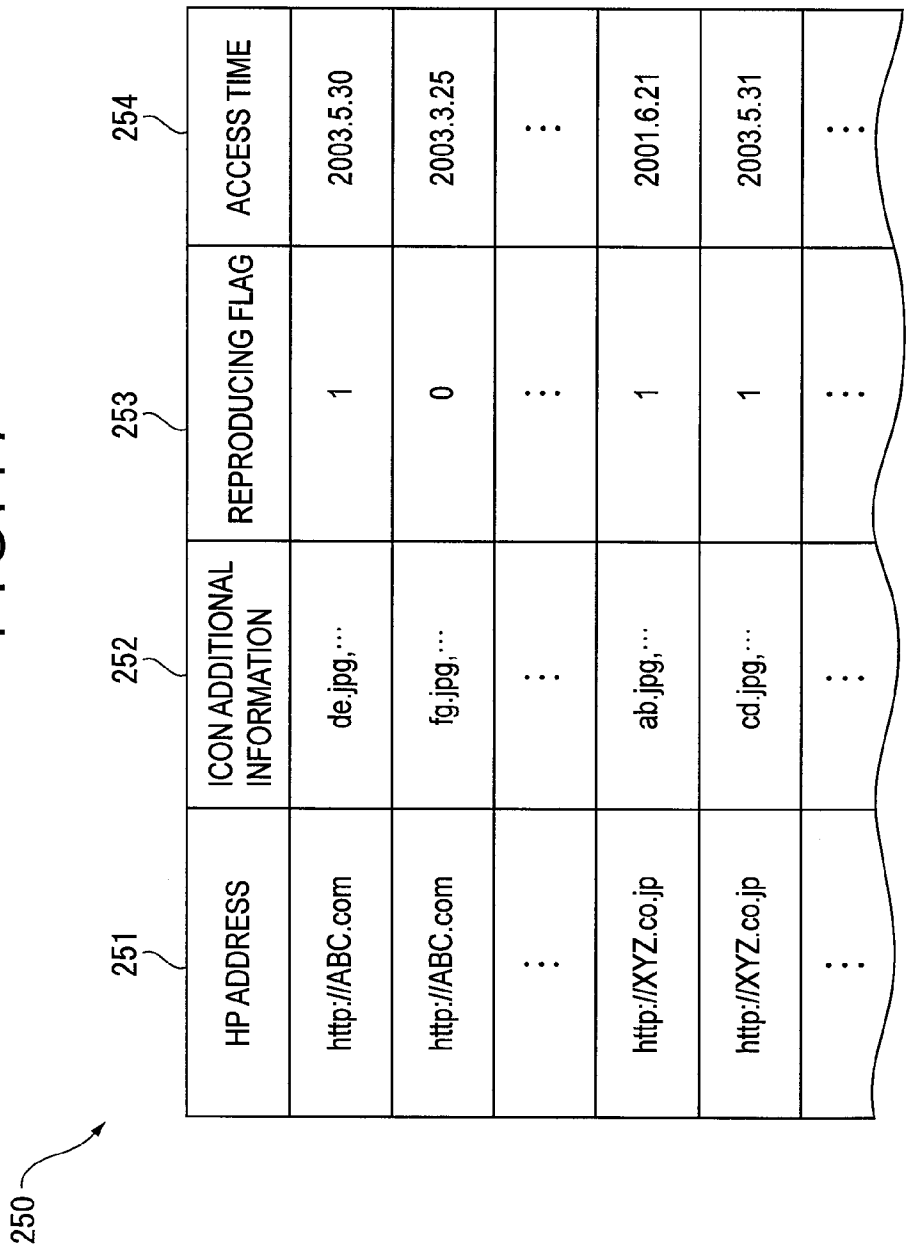

250
251
252
253
254
HP ADDRESS
ICON ADDITIONAL INFORMATION
REPRODUCING FLAG
ACCESS TIME
http://ABC.com
de.jpg,…
1
2003.5.30
http://ABC.com
fg.jpg,…
0
2003.3.25
http://XYZ.co.jp
ab.jpg,…
1
2001.6.21
http://XYZ.co.jp
cd.jpg,…
1
2003.5.31

FIG. 18

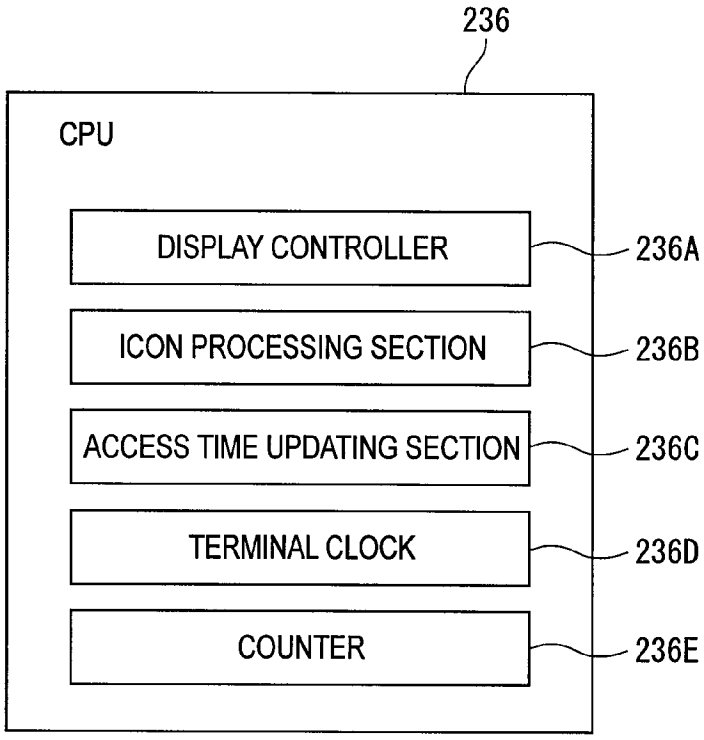

236
CPU
DISPLAY CONTROLLER
236A
ICON PROCESSING SECTION
236B
ACCESS TIME UPDATING SECTION
236C
TERMINAL CLOCK
236D
COUNTER
236E

FIG. 19

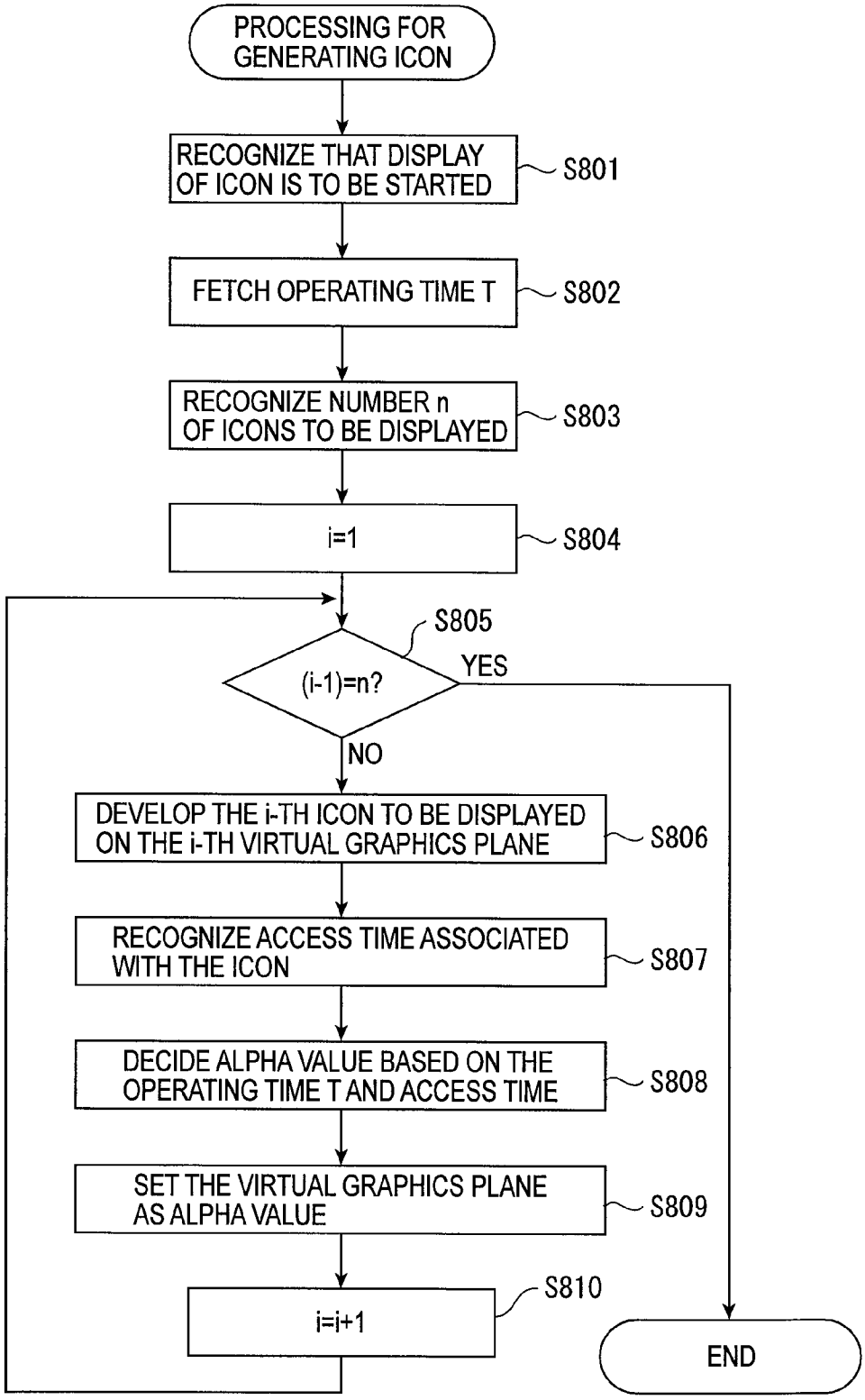

PROCESSING FOR GENERATING ICON
RECOGNIZE THAT DISPLAY OF ICON IS TO BE STARTED
S801
FETCH OPERATING TIME T
S802
RECOGNIZE NUMBER n OF ICONS TO BE DISPLAYED
S803
i=1
S804
S805
(i-1)=n?
YES
NO
DEVELOP THE i-TH ICON TO BE DISPLAYED ON THE i-TH VIRTUAL GRAPHICS PLANE
S806
RECOGNIZE ACCESS TIME ASSOCIATED WITH THE ICON
S807
DECIDE ALPHA VALUE BASED ON THE OPERATING TIME T AND ACCESS TIME
S808
SET THE VIRTUAL GRAPHICS PLANE AS ALPHA VALUE
S809
i=i+1
S810
END

FIG. 20

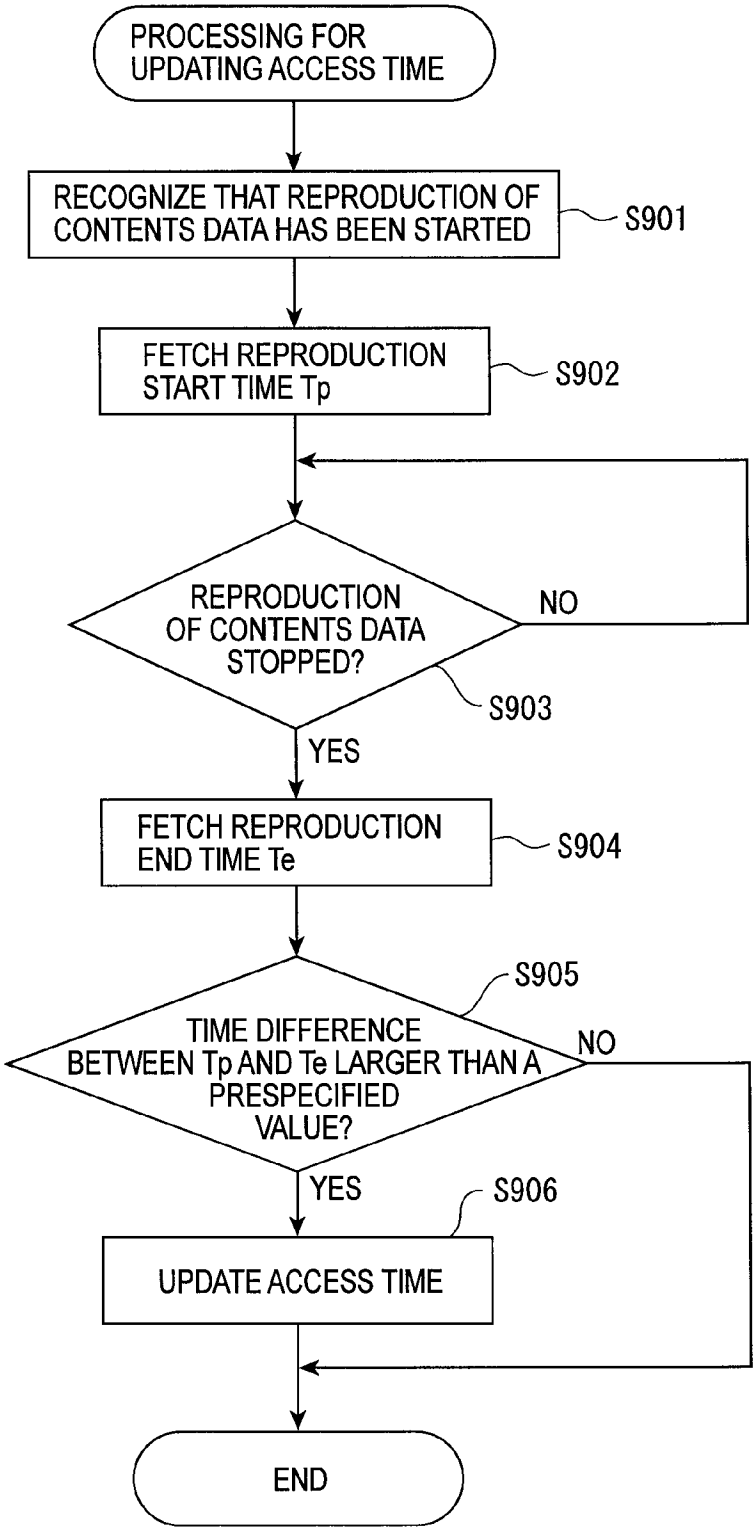

PROCESSING FOR UPDATING ACCESS TIME
RECOGNIZE THAT REPRODUCTION OF CONTENTS DATA HAS BEEN STARTED
S901
FETCH REPRODUCTION START TIME Tp
S902
REPRODUCTION OF CONTENTS DATA STOPPED?
NO
S903
YES
FETCH REPRODUCTION END TIME Te
S904
S905
TIME DIFFERENCE BETWEEN Tp AND Te LARGER THAN A PRESPECIFIED VALUE?
NO
YES
S906
UPDATE ACCESS TIME
END

FIG. 21

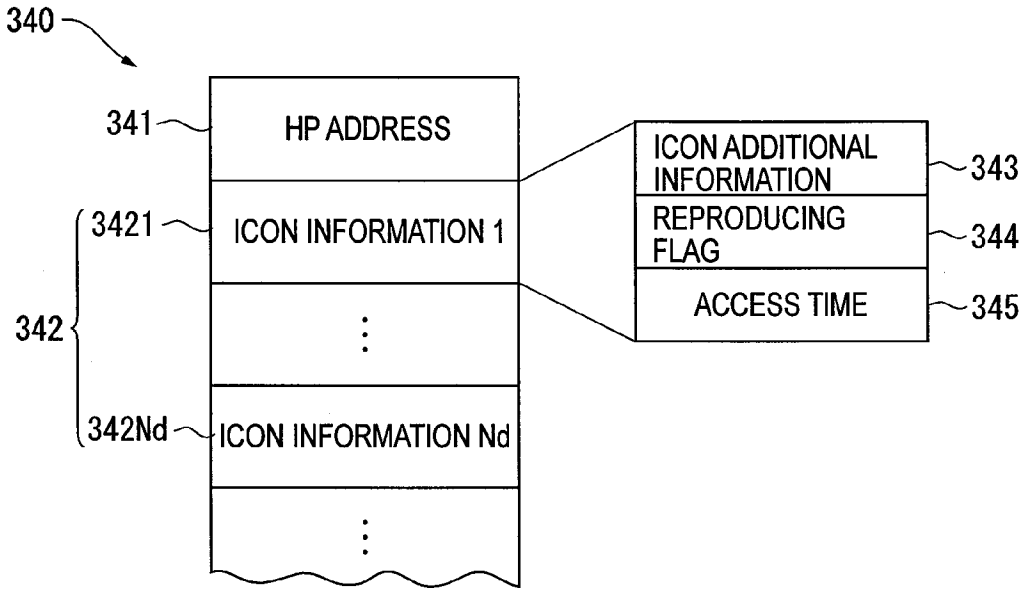
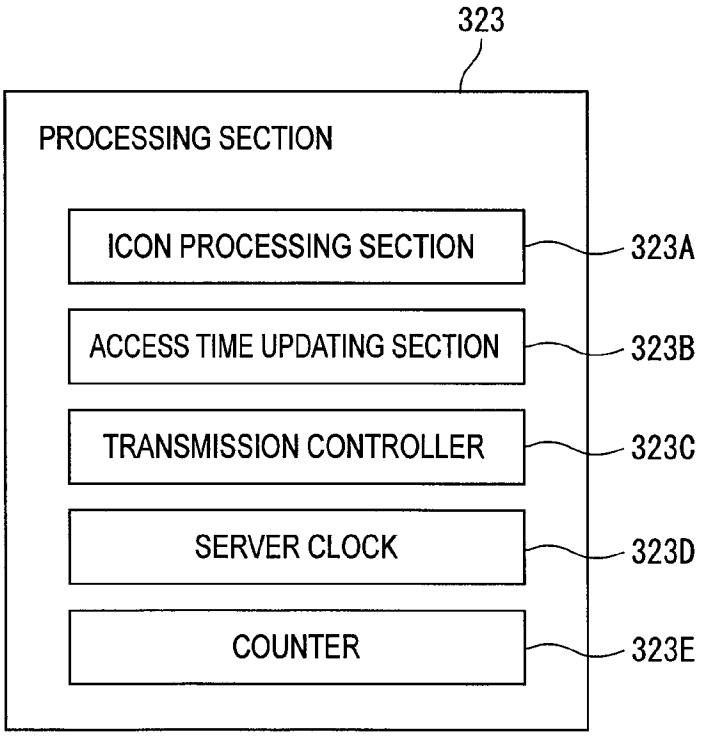

340
341
HP ADDRESS
3421
ICON INFORMATION 1
342
342Nd
ICON INFORMATION Nd
ICON ADDITIONAL INFORMATION
343
REPRODUCING FLAG
344
ACCESS TIME
345

FIG. 22


323
PROCESSING SECTION
ICON PROCESSING SECTION
323A
ACCESS TIME UPDATING SECTION
323B
TRANSMISSION CONTROLLER
323C
SERVER CLOCK
323D
COUNTER
323E

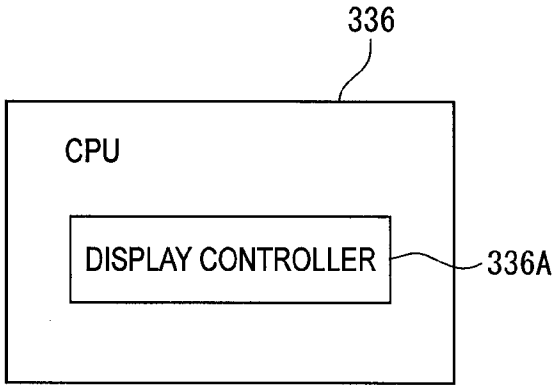



FIG. 23